

**REMARKS**

The present invention is directed to an automotive information system having a main host unit mounted within the vehicle, for example, a car audio system having a speaker with sound information acquired through a radio tuner/cassette tape deck/CD player, etc.

A car audio system can have various external units including microphones, amplifiers, tuners, user faceplate unit, IR communication unit, etc., and peripheral devices can be readily incorporated into the automotive information system through a specialized Universal Serial Bus that acts as an automotive information system cable, having for example, a plurality of power lines, including a backup power line, an open signal line for transmitting start signals from one or more peripheral devices, a reserve line, and an additional ground.

Backup power can be supplied, for example, from a reserve battery and, therefore, a start signal can be sent from one or more of the peripheral devices through the signal line by using the backup power available to each of the peripheral devices, for example, from a car battery. See the discussion starting at the bottom of Page 26 through Page 27 of our present specification, including the following:

Thus, when the power supply to the main unit 1 is off, supply of electrical power to the devices or units through the first power line is not conducted but the devices or units are supplied with backup electrical power from the backup power supply of the automobile through the second power line. It is therefore possible to send a start signal to the main unit 1 from one or more of the devices or units through the signal line Wake Up, by using the backup power supplied to the devices or units.

A main host computer can have a user interface panel mounted, for example, in the dashboard of the vehicle and can even be removable to further heighten any security of the audio system to prevent theft. One of the uses of the peripheral devices can be an additional security detection system that can monitor any breaking into of the vehicle and can even activate the

automobile information system of the present invention to provide not only an alarm, but to activate another peripheral device such as a wireless telephone system that has been wired into the automobile information system, to use both mikes and speakers associated with the car or the vehicle sound system, and further to activate a telephone message to the owner or a security service.

Thus, various peripheral devices can have predetermined conditions that when met, can cause a peripheral device by itself to send a start signal to the main host unit that will power the system. The main host unit can respond by inquiring which of the peripheral devices have activated it and in response to such an inquiry, can activate an appropriate protocol associated with the peripheral device or peripheral devices.

The processing and response to the start signal is described, for example, on Page 52 through Page 55 of the present invention. In this regard, an interrupt control register can have masks set to determine which interrupts, requested through the interrupt signal lines, are accepted or rejected. A wakeup signal can remain active no matter what the masks are set, as described, for example, in the second paragraph on Page 54 as follows:

It is prohibited to set up a mask for the interrupt signal line Wake Up. More specifically, setting "0" on the bit of the register corresponding to the Wake Up interrupt line is invalid, and the value of the mask on the bit corresponding to the Wake Up interrupt signal line is fixed to "1." In this system, the CPU module 11 is not completely dead even when the power supply of the automotive information system is turned off after normal use of the system.

A power managing unit can select various operation modes for powering up the main unit as described on Page 55.

As can be appreciated, the present invention provides a further patentable evolution of sophistication in an automobile sound system to enable optional features to be readily integrated

into the vehicle and implemented with the use of a backup power system and through the initiation of the peripheral devices with a subsequent identification of the peripheral device from the awakened main host to instigate an appropriate protocol.

The present claims are further amended to emphasize these unique features since it is believed that the Office Action took a liberal and broad view of the original claim language.

The Office Action rejected each of the outstanding claims as being unpatentable over a combination of the *Chan et al* (U.S. Patent No. 5,991,546) in view of the *Kawashima* (U.S. Patent No. 5,778,312).

The *Chan et al* reference was purportedly a description of an automotive information system as shown in Figures 1 and 2 with a main unit 20 purportedly having a detecting means 4 to determine a start signal and means for turning on a power supply in response to the start signal.

It was specifically acknowledged that the *Chan et al* reference did not have means for detecting when a predetermined condition has been satisfied, nor did it teach sending a start signal from a peripheral device to a main unit, with a main unit operating only when the power supply is turned on in response to the start signal and in return inquiring from the peripheral devices which device has sent the start signal with a peripheral device having means for answering such an inquiry.

Applicant first respectfully traverses the interpretation of the *Chan et al* reference as disclosing an automobile information system. The *Chan et al* reference was directed at providing a data management unit or interface device 20 that was capable of coupling a host 16 to specific peripheral devices, which in the embodiment of Figure 1, is a computer keyboard 10 or a mouse 12 with a Universal Serial Bus for communication with the host 16. A mouse and a

typing keyboard are certainly peripheral devices that can be interconnected with the operating system of a personal computer, but they are not suggestive of an automobile information system.

The Office Action specifically referred to Column 5, Lines 5-55 for purposes of detecting a start signal and for turning power on to the main unit. As can be appreciated, the main unit presumably would be the host computer 16 shown in Figure 1. An I/O interface 20 is neither the host unit nor a peripheral device. As shown, interface 20 does incorporate a computer to manage information input from devices such as computer keyboard 10, and a mouse device 12.

The detector 4 is actually described in Column 5, Lines 5-55 as supporting a keyboard interrupt end point to prevent “ghost key indications” and to perform debouncing functions. Basically, the “detector” is capable of filtering out erroneous inputs to derive reliable information from the operation of the keyboard. Thus, key vibration or bounce that could give an erroneous indication can be ascertained to ensure that a proper value system can be transmitted to the USB.

As noted in Paragraph 5, Lines 1-4, the peripheral devices of the keyboard 10 and the mouse 12 are passive and their states are provided only in response to a USB 14 request from the host 16. Thus, it is respectfully submitted that there are no means for turning on a power supply to the main unit upon detecting a start signal from a peripheral device, nor a backup power supply remote from the peripheral devices.

The Office Action further cited Column 6, Lines 1-45 for purportedly showing one device connected to a main unit. Again, the mouse device is described in this cited material with the interface 20 providing a keyboard matrix engine, or keyboard scanner. It is believed that the Office Action is simply referring to the input of a user contacting the keyboard after the system has already been powered up, so that a microprocessor in the interface device 20 receives an indication of activation of the user input by contacting a key as a purported “remote wakeup

feature.” This, however, is not technically equivalent to the start signal or wakeup feature employed in the automobile information system of the present invention to start a power up of a host main unit.

The terminology of a “remote wakeup feature” which is directly connected to the keyboard matrix engine scanner 42, is not a similar “wakeup feature” wherein a host main unit in an automobile information system is literally powered up from a startup signal from a peripheral device such as a security detection system with auxiliary power being provided to the peripheral device through the USB cable so that it is not, in essence, passive “in a sense that their states are provided only in response to the USB 14 request” initiated via the host 16 as described in Column 5, Lines 2-4.

The Office Action further cited Column 7, Line 27 – Column 8, Line 29 which again describes the possibility of erroneous inputs when scanning column lines by the keyboard matrix engine, which can provide “ghost key conditions” such as when three or more keys are held at the same time on the keyboard 10. See Column 7, Lines 53-56.

As noted in the flowchart of Figure 6, the 8051 core microprocessor 22 simply provides the standard operating system power on a self test and ASIC circuit unit determines if any faults are discovered. As can be appreciated from the flowchart of Figure 6B, purportedly the “host” is polling sequentially the passive peripheral devices connected to the interface. As can be further seen in Figure 6A, the various decisional boxes are dependent upon input from the host computer 16 after the initialization of the hardware interfaces and firmware attributes. See Column 8, Lines 40-58.

In summary, the *Chen et al* reference relates to a USB interface for a bus powered type USB keyboard or legacy device. Clearly there is no special power control being initiated

between the peripheral device and the host computer, no matter which processor is considered the host. The *Chen et al* reference specifically stipulates to a USB bus powered specification which is a well known one. Thus, a USB device utilizes power supplied from a host device connected to the USB via a bus line as the driving power for the device itself. On connection of the device to the bus power source, power is supplied to the device. In addition, the device can reset itself with the power fed thereto to send a notification to the host and controller via the USB bus so that the host will implement connection authentication processing for the device.

As can be appreciated, the host side controller needs to be constantly in an active state to monitor any device connection.

Our invention has the peripheral device powering up the host device when triggered by a dedicated start signal from the peripheral device side. And secondly, the activated host then attempts to identify which of the peripheral devices has sent the startup signal after the activation.

Our invention further utilizes a second power line to provide a remote backup power to the peripheral device side, even when the host is not activated. In addition, a dedicated start signal line runs from the peripheral device side to the host side and thus, it is clear that our automotive information system and the specialized USB power connections are significantly different from the *Chen et al* disclosure.

The *Kawashima* (U.S. Patent No. 5,778,312) must be relied upon as the teaching reference for the rejection under 35 U.S.C. §103 in view of the deficiencies mentioned above in the *Chen et al* disclosure.

The mere fact that the prior art *may* be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Fritch*, 23 U.S.P.Q. 2d 1780, 1783-84 (Fed. Cir. 1992).

[T]he level of skill in the art is a prism or lens through which a judge or jury views the prior art and the claimed invention. This reference point prevents these deciders from using their own insight or, worse yet, hindsight, to gauge obviousness. Rarely, however, will the skill in the art component operate to supply missing knowledge or prior art to reach an obviousness judgment. Skill in the art does not act as a bridge over gaps in substantive presentation of an obviousness case, but instead supplies the primary guarantee of objectivity in the process. *Al-Site Corp. v. VSI International, Inc.*, 50 U.S.P.Q.2d 1161 (Fed. Cir. 1999) (citations omitted).

The Federal Circuit has addressed this issue in the case of *In re Rouffet*, 47 U.S.P.Q.2d 1453, 149 F.3d 1350 (Fed. Cir. 1998). In *Rouffet*, the Court noted that virtually all inventions are combinations of old elements. It concluded that:

an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be ‘an illogical and inappropriate process by which to determine patentability.’ *Id.* at 1357.

The Court pointed to the absence of any teaching *in the cited references* for making the proposed modifications, and found that the Board had *reversibly erred* in determining that the invention was rendered obvious because there was no identification of motivation to choose the selected features.

The *Kawashima et al* reference is alleged in the Office action as being from the “same field of endeavor” and more specifically refers to a radio selected call receiver having a function

to detect a power voltage and activate input switch circuit for selecting a demodulated signal or a power voltage and applying it in an analog digital converter.

However, the *Kawashima et al* reference is only disclosing a pager and any base station or host computer would purportedly be sending signals that are received by antenna 1 shown in Figure 1. Thus, there is not any wakeup signal being sent to the host computer, nor any signal being sent to power up the host computer or base station. Basically, the pager is being awakened by a signal input from the antenna 1 and as one of the features of the pager, can monitor the power voltage available from its internal battery, mounted in the peripheral device, and if that voltage is lower than a predetermined level it can activate a "call reporting unit 11" consisting of one or more of a speaker, LED, LCD and vibrator and operates while the report drive signal is applied from an internal control unit 10 in the pager. In laymen's language, the pager will make a noise, disclose a message or vibrate if its power is low so that the user can replace the battery.

In contrast, our invention has a remote secondary battery or auxiliary battery source 9 shown in Figure 1 of our invention which can ensure that each peripheral device may have sufficient battery power through the USB second power line to support a start signal applied to our main unit to activate the automobile information system. The main unit then polls the peripheral devices with its inquiring unit to determine which peripheral device has powered up the system. There is certainly no teaching as alleged in the Office Action that would have any technique of *Kawashima et al.* applied to the I/O interface device of the *Chan et al.* disclosure. As mentioned above, all of the figures of the *Kawashima et al.* reference are referring to an operation self-contained within the pager which is activated by a particular frame signal.

In summary, the *Kawashima et al.* relates to the detection of an incoming call and a detection of battery voltage reduction for purposes of extending a service life of a battery of a



pager. An ADC (analog digital converter) can thereby serve a double function of detecting a demodulated signal and the detection of a power voltage and secondly a reception frame containing a call number to save a battery power consumption with the power of the radio section turned off during a reception standby period. Any turning on of the power in the radio section in a predetermined pattern by a control section is not based on an external factor and is certainly not based on any peripheral device connected to the pager. Likewise, the pager is not a peripheral device to turn on the base station or a host computer.

The detection of a predetermined condition in our invention is one that turns the power of the system ON which would be turning on the power of the base station or host unit. *Kawashima et al.* simply provides a call-page notification instead of turning the power of the system ON under a detected condition.

Referring to the amended claims such as Claim 1, the main unit has means for detecting a start signal and means for turning on a power supply to the main unit in response to the start signal. At least one peripheral device has means for detecting when a predetermined condition has been satisfied and means for sending a start signal to the main unit. The main unit also has the capability of, after the power supply is turned on in response to the start signal, inquiring which peripheral device has sent the start signal and the peripheral device has the capacity to answer the inquiry. The additional claims define a specific and unique powered USB bus system and the particular applications relative to a security system and a wireless telephone unit.

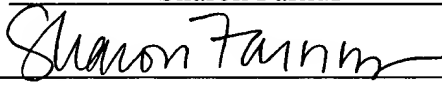
The newly drafted Claim 36 provides an alternative definition in the environment of an automobile information system of the relationship between a host main unit and a plurality of peripheral devices connected by a USB cable enabling electric power to be supplied from not

only the host's main unit but also from a remote backup power unit while facilitating the start up signal and the identification of the peripheral device that sends the start up signal.

In view of the amendments to the claims, the submission of the new claims and the above comments it is believed that the case now in condition for allowance and early notification of the same is requested.

If the Examiner believes that a telephone interview will help further the prosecution of this case, he is respectfully requested to contact the undersigned attorney at the listed telephone number.

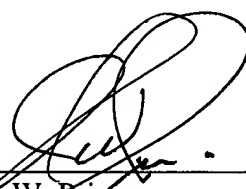
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By: Sharon Farnus  
  
Signature

Dated: December 8, 2005

Very truly yours,

**SNELL & WILMER L.L.P.**

  
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